

**DETAILED ACTION**

- a. This action is taken in response to request for continued examination (RCE) filed on 4/12/2010.
- b. Claims 1, 3-8, 10-14, 16-18, 20-22, 24, 26-30, 32-34, 36, 39, and 41-43 (renumbered as 1-32) are allowed.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 12, 2010 has been entered.

***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone conversation with Applicant's attorney Mark F. Niemann (Reg. No. 61,817) on June 18, 2010.

Please enter the amendment filed on 4/12/2010 and further amend as follows:

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1. **(Currently Amendment)** A method, implemented in a device, the method comprising:

obtaining a task sequence at the device that describes a set of one or more steps to be carried out in managing multiple additional devices;

generating a job tree at the device representing the set of one or more steps, the set of one or more steps configured to ~~perform a method comprising:~~

determine ~~determining~~ a hardware configuration of each of the multiple additional devices;

download ~~downloading~~ a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes ~~sufficient~~ functionality to enable ~~[[an]]~~ a full operating system to be installed on each of the multiple additional devices, the deployment agent including one or more device drivers to control one or more hardware components of the multiple additional devices;

download ~~downloading~~ ~~[[an]]~~ the full operating system to the multiple additional devices; and

reboot ~~rebooting~~ the multiple additional devices into the full operating system; and

sending one or more commands configured to carry out the set of one or more steps in accordance with the job tree, wherein the one or more commands are configured to carry out at least one of the one or more steps asynchronously for the multiple additional devices, and are configured to carry out at least one of the one or more steps concurrently for the multiple additional devices, wherein the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple additional devices.

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2. **(Canceled)**

3. (Previously Presented) The method as recited in claim 1, wherein carrying out the set of one or more steps comprises:

carrying out a first step of the set of one or more steps; and

carrying out the remaining steps of the set of one or more steps only if the first step is completed successfully.

4. **(Currently Amendment)** The method as recited in claim 1, wherein carrying out the set of one or more steps causes the device to have firmware on the multiple additional devices configured ~~and an operating system to be deployed on the multiple additional devices.~~

5. (Previously Presented) The method as recited in claim 1, wherein the task sequence is part of an Extensible Markup Language (XML) file.

6. (Previously Presented) The method as recited in claim 1, wherein one of the steps comprises another task sequence.

7. (Previously Presented) The method as recited in claim 1, wherein one of the steps comprises an operation to be performed.

8. (Previously Presented) The method as recited in claim 1, wherein the job tree comprises a parent node corresponding to the job and one or more child nodes, wherein each child node corresponds to one of the one or more steps.

9. **(Canceled)**

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10. (Previously Presented) The method as recited in claim 1, wherein the task sequence comprises a user-defined task sequence.

11. (Previously Presented) The method as recited in claim 1, wherein the task sequence comprises a user-selected task sequence.

12. (Previously Presented) The method as recited in claim 1, further comprising recording the set of one or more steps in a log.

13. **(Currently Amendment)** One or more computer readable storage media having stored thereon a plurality of instructions that, when executed by one or more processors, causes the one or more processors to:

receive a user-defined task sequence;

convert the user-defined task sequence into an ordered series of steps, the ordered series of steps configured to ~~perform a method comprising:~~

determine ~~determining~~ a hardware configuration of multiple devices;

download ~~downloading~~ a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes functionality to enable ~~[[an]]~~ a full operating system to be installed on each of the multiple devices, the deployment agent including one or more device drivers to control one or more hardware components of the multiple devices;

download ~~downloading~~ ~~[[an]]~~ the full operating system to the multiple devices;

and

reboot ~~rebooting~~ the multiple devices into the full operating system; and

send one or more commands configured to perform the series of steps in managing the multiple devices over a network in accordance with ~~their order~~ the ordered series, wherein the one or more commands are configured to perform at least one of the series of steps

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asynchronously for the multiple devices and are configured to perform at least one of the series of steps concurrently for the multiple devices, wherein the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple devices.

14. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the user-defined task sequence is received in an Extensible Markup Language (XML) format.

15. **(Canceled)**

16. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the instructions that cause the one or more processors to perform the series of steps comprise instructions that cause the one or more processors to:

carry out a first step of the series of steps; and  
carry out the remaining steps of the series of steps only if the first step is completed successfully.

17. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the task sequence includes another task sequence.

18. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the task sequence includes one or more operations to be performed.

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19. (Canceled)

20. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the instructions that cause the one or more processors to convert the user-defined task sequence into an ordered series of steps comprises instructions that cause the one or more processors to convert the user-defined task sequence into a tree having a plurality of nodes, wherein each of the steps is represented by one of the plurality of nodes.

21. (Previously Presented) The one or more computer readable storage media as recited in claim 13, wherein the plurality of instructions further causes the one or more processors to log the series of steps as having been performed on the multiple devices.

22. **(Currently Amendment)** A method, implemented in a device, the method comprising:

obtaining a user-defined task sequence at the device that describes actions to be carried out to automatically deploy [[an]] a full operating system to multiple additional devices;

converting, at the device, the user-defined task sequence to a set of one or more steps of a job to be carried out to automatically deploy the full operating system to the multiple additional devices, the set of one or more steps comprising:

determining a hardware configuration of each of the multiple additional devices;

downloading a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices and includes one or more device drivers that are configured to control hardware components on the multiple additional devices that can be used to deploy [[an]] the full operating system on each of the multiple additional devices;

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downloading [[an]] the full operating system to the multiple additional devices by copying an operating system image file to the multiple additional devices; and rebooting the multiple additional devices into the full operating system; and sending one or more commands configured to carry out the one or more steps of the job, wherein the one or more commands are configured to carry out at least one of the one or more steps asynchronously for the multiple additional devices, and are configured to copy the operating system image file to the multiple additional devices concurrently, wherein the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple additional devices.

23. (Canceled)

24. (Previously Presented) The method as recited in claim 22, wherein carrying out the set of one or more steps comprises:

carrying out a first step of the set of one or more steps; and carrying out the remaining steps of the set of one or more steps only if the first step is completed successfully.

25. (Canceled)

26. (Previously Presented) The method as recited in claim 22, wherein the converting comprises converting the user-defined task sequence to a tree having a plurality of nodes, wherein each of the one or more steps is represented by one of the plurality of nodes.

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27. **(Currently Amendment)** One or more computer readable storage media having stored thereon a plurality of instructions that, when executed by one or more processors, causes the one or more processors to:

obtain a user-selected task sequence;

convert the user-selected task sequence into an ordered series of steps, the ordered series of steps configured to automatically deploy ~~[[an]]~~ a full operating system to multiple devices, the ordered series of steps comprising:

determining a hardware configuration of multiple devices;

downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes one or more device drivers that are configured to control hardware components on the multiple devices that can be used to deploy ~~[[an]]~~ the full operating system on each of the multiple devices;

downloading ~~[[an]]~~ the full operating system to the multiple devices; and

rebooting the multiple devices into the full operating system; and

send one or more commands configured to perform the series of steps to automatically deploy the operating system to the multiple devices over a network in accordance with ~~their order~~ the ordered series, wherein the one or more commands are configured to perform at least one of the series of steps asynchronously for the multiple devices and are configured to perform the step of downloading the operating system to the multiple devices in parallel, wherein the one or more commands are performed asynchronously or in parallel based at least in part on the amount of data being transferred to the multiple devices.

28. **(Previously Presented)** The one or more computer readable storage media as recited in claim 27, wherein the user-selected task sequence is a user-defined task sequence.

29. **(Previously Presented)** The one or more computer readable storage media as recited in claim 27, wherein the ordered series of steps comprises a tree having a plurality of



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nodes, wherein each of the one or more elements for each step is represented by one of the plurality of nodes.

30. (Previously Presented) The one or more computer readable storage media as recited in claim 29, wherein the ordered series of steps includes a one to one corresponding of elements to steps.

31. (Canceled)

32. (Previously Presented) The one or more computer readable storage media as recited in claim 27, wherein the instructions that cause the one or more processors to perform the ordered series of steps comprise instructions that cause the one or more processors to:

- carry out a first step of the ordered series of steps; and
- carry out the remaining steps of the ordered series of steps only if the first step is completed successfully.

33. (Previously Presented) The one or more computer readable storage media as recited in claim 27, wherein the task sequence includes another task sequence.

34. (Previously Presented) The one or more computer readable storage media as recited in claim 27, wherein the task sequence includes one or more operations to be performed.

35. (Canceled)

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36. **(Currently Amendment)** A system comprising:

a processor; and

a memory embodying instructions configured to:

obtain a task sequence that describes a set of one or more steps to be carried out to automatically deploy ~~[[an]]~~ a full operating system to multiple devices;

generate a job representation of the set of one or more steps, the set of one or more steps comprising:

determining a hardware configuration of each of the multiple devices;

downloading a deployment agent to each of the multiple devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple devices and includes one or more device drivers that are configured to control hardware components on the multiple devices that can be used to deploy the full operating system on each of the multiple devices;

downloading ~~[[an]]~~ the full operating system to the multiple devices by copying an operating system image file to the multiple ~~additional~~ devices;

rebooting the multiple devices; and

configuring the operating system of the multiple devices; and

send one or more commands configured to carry out the set of one or more steps in accordance with the job representation, wherein the one or more commands are configured to carry out the steps of rebooting and configuring the operating system asynchronously for the multiple devices, and are configured to copy the operating system image file to the multiple devices concurrently, wherein the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple additional devices.

37. **(Canceled)**

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38. (Canceled)

39. **(Currently Amendment)** A system comprising:

a processor; and

a controller, stored on one or more computer-readable storage media and configured to be implemented at least in part by at least one of one or more processors to obtain a task sequence that describes one or more steps to be performed on multiple remote devices, and to generate a job representation of the one or more steps, the one or more steps configured to perform at least one of:

determining a hardware configuration of each of the multiple remote devices;

downloading a deployment agent to each of the multiple remote devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple remote devices and includes one or more device drivers that are configured to control hardware components on the multiple remote devices that can be used to deploy a full operating system on each of the multiple remote devices;

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downloading [[an]] the full operating system to the multiple remote devices;  
rebooting the multiple remote devices; and  
configuring the full operating system of the multiple remote devices; and  
a network boot service, configured to be implemented at least in part by at least one of the one or more processors to detect when the multiple remote devices are coupled to a network that the system is also coupled to, and to communicate with the controller to determine which of the steps of the job representation are to be carried out in response to the detection, wherein at least one of the one or more steps are configured to be carried out asynchronously for the multiple remote devices, and at least one of the one or more steps are configured to be carried out concurrently for the multiple remote devices, wherein the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple remote devices.

40. (Canceled)

41. (Previously Presented) The system as recited in claim 39, wherein one of the steps comprises another task sequence.

42. (Previously Presented) The system as recited in claim 39, wherein one of the steps comprises an operation to be performed on the multiple remote devices.

43. (Previously Presented) The system as recited in claim 39, wherein the job representation comprises a tree having a plurality of nodes, and wherein each of the one or more steps is represented by one of the plurality of nodes.

***Reason for Allowance***

The following is an Examiner's statement of reasons for allowance:

In view of Applicant's amendment submitted on 4/12/2010, overcomes the objections/rejections. Furthermore, the prior art made of records does not teach or fairly suggest the combination of elements, as recited in independent claims 1, 13, 22, 27, 36, and 39. More specifically, the prior art of records does not specifically suggest wherein as amended, among other limitations, the limitation of "download a deployment agent to each of the multiple additional devices, the deployment agent comprising a temporary operating system that is designed for the particular hardware configuration of each of the multiple additional devices", "the one or more commands are performed asynchronously or concurrently based at least in part on the amount of data being transferred to the multiple additional devices".

However, none of the prior art of the record teaches or suggests, independently or in combination, the combination of claimed elements including the specific features recited by the independent claims as indicated above. After a further search and a thorough examination of the present application and in light of the prior art made of record, independent claims 1, 13, 22, 27, 36, and 39 are allowed.

The dependent claims, being definite, further limiting, and fully enabled by the specification and are also allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEW-FEN LIN whose telephone number is (571)272-2672.

The examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHEW-FEN LIN/  
Examiner, Art Unit 2166  
June 22, 2010